

## Spices scenario in the North Eastern States of India with special reference to production and marketing

V. HNAME, R. CHATTERJEE, P. K. CHATTOPADHYAY  
AND A. PARIARI

Department of Spices and Plantation Crops  
Faculty of Horticulture, Bidhan Chandra Krishi Viswavidyalaya  
Mohanpur-741252, West Bengal, India

Received:30-12-2011 Revised:15-10-2012 Accepted:31-10-2012

### ABSTRACT

India is reckoned as "Spice Bowl of the World", for commanding a formidable position in the world spice trade. To compete with other spice growing countries in the world spice market, propping up productivity and tapping of potentiality of non-conventional spice growing areas is gaining importance. North Eastern region harbours a rich flora on account of its varied topography, climate and altitudes and has great potential for the development of horticulture crops like spices. In this region, a huge quantity of good quality spices are produced, but most of the growers during peak season sell their produce at throw away prices in the local market or to the commission agent. The need of the hour is to promote public-private partnership so that the production technology of important spices is taken to every nook and corner of this region. There is need to improve infrastructure extension network, focused research in order to harness the potentiality of this region for quality spice production. It is suggested to form farmers' organizations/co-operatives both at local level and at the regional level for better marketing of the produce.

**Key words:** Production, marketing, spices

India is commanding a formidable position in the world spice trade with 47% share in volume and 40% in value. India is always hailed as major producer of spice, but off late in the world spice market, it is facing stiff challenges from countries like Indonesia, Malaysia, Madagascar, Vietnam, China etc. To compete with other spice growing countries in the world spice market, propping up productivity and tapping of potentiality of non-conventional spice growing areas is gaining importance. North Eastern region of India, comprising of Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim harbours a rich flora on account of its varied topography, climate and altitudes and has great potential for the development of horticulture crops like spices. The total geographic area of NE region is 262,180 square km which is nearly 8% of the total geographic area of the country (Yadav *et al.*, 2003). The region represents wide variation of climate ranging from cold to warm pre-humid and receives mean annual rainfall exceeding 2000 mm per annum. The soils of the region are usually rich in organic matter and acidic to strongly acidic (pH 4.5- 5.0) in reaction and thus suitable for growing different spice crops. The North Eastern region faces vagaries of high rainfall and consequently the nutrient depletion and the erosion. Agro-climatically the region is known for its wide diversity representing temperate, subtropical and tropical areas. The diversity within a single region provides ample scope for growing a large variety of crops (Dubey *et al.*, 2000). Vast scope exists for development, particularly of ginger, chillies, black pepper, turmeric, tree spices like clove and cinnamon etc.

### Spice production in North East India

The availability of wide genetic resource base and varying production systems in these regions ensures sustainable production of different spice crops. It is anticipated that the region can create exportable surplus at competitive prices so that the top slot occupied by the country in international market for spices would be maintained. Among spices, ginger cultivation has increased by 3,356 ha followed by 3,775 ha of large cardamom, 2,773 ha of black pepper and 843 ha of turmeric. Though recently introduced the region has a potential for commercial cultivation of vanilla, cumin and saffron. An area of 1, 40, 241 ha is under spice production with annual production 1,37,514 tonnes. Among the different spices grown in the region, three commercial crops are ginger, turmeric and large cardamom. Among all spices, ginger is the main cash crop supporting the livelihood and improving the economic level of many ginger growers of north eastern region. Ginger is grown in almost all the states of the region but the leading states are Meghalaya, Mizoram, Arunachal Pradesh and Sikkim (Govind *et al.*, 1998). Ginger is already a well established cash crop in Meghalaya and Mizoram with highest productivity in the country. Large scale seed production of improved variety like Nadia in Meghalaya and marketing support in Mizoram encouraged ginger cultivation. There is still a good scope for improving the productivity in ginger and some processing support (dehydrated ginger of low fibre containing variety) may boost the crop further. Ginger cultivation should be encouraged in Assam and Arunachal Pradesh, where productivity is quite good. Sikkim has also come up well with ginger

production in recent years. Ginger export from North East Region during 2001-02 was about 1640 tonnes.

Large cardamom farming as an under storey crop in hill slopes of Sikkim is a unique traditional production system. Cardamom is reported to cover about 23 thousand ha. Stability of the system in the hill slopes under cardamom is considered as a high value cash crop in Sikkim and generated employment for 80-100 days per ha. Under Horticulture Technology Mission, an additional area of 3775 ha has been reported under large cardamom in North East Region states. Cardamom Board should focus therefore more attention in promoting large cardamom in the hilly areas (Ghosh, 2007).

Meghalaya is one of the leading state in case of ginger (7.4 thousand ha) followed by Arunachal Pradesh and Mizoram. While the Assam has maximum area of chilli (14.3 thousand ha) followed by ginger and turmeric. Black pepper is also showing promise and organic production is possible to a limited extent. Large scale planting material production technique developed by research system should be popularized in this region.

#### Vision for spice crops cultivation

- Average productivity of ginger (6.4t) is much higher than all India average and the productivity

of turmeric in the region is only 1.5t against 3.9t/ha in the country. Under HTM (Horticulture Technology Mission), spices received a major focus and already 13,525 ha additional area has been brought under major spices (ginger 3775 ha; large cardamom; black pepper 2773 ha and turmeric 843 ha). The visions are as follows:

- Increase of the productivity of turmeric to at least 7 t/ha is essential and possible. Expansion of area with high curcumin containing varieties in suitable location (Meghalaya, Nagaland etc).
- Attempts need to be made to increase the area under ginger and chilli particularly for the following reasons:
- The state of Assam and Sikkim has been declared as AEZ for ginger. This recent establishment of AEZ in these states has created enormous scope for streamlining the production and processing of ginger.
- Large cardamom is an unique crop for this region, and black pepper is also highly potential.

The thrust area would be to increase production and explore processing, packaging and marketing both for domestic and export market. Organic spice enjoining export market should receive focus.

**Table 1: Area (000' ha) and production (000't) of major spices of NE region**

State	Chilli		Ginger		Turmeric		Large cardamom		Black pepper	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
Arunachal Pradesh	1.2	1.60	4.34	31.09	0.40	1.50	3.84	0.56	1.32	-
Assam	14.7	0.97	-	-	10.10	7.00	-	-	-	-
Manipur	8.8	5.30	5.90	9.70	-	-	-	-	-	-
Nagaland	1.2	9.60	7.60	6.69	0.60	3.59	1.46	0.15	3.70	2.6
Mizoram	2.8	3.30	7.60	20.50	0.40	3.60	-	-	-	-
Meghalaya	1.8	1.10	4.10	49.06	1.50	8.20	-	-	-	-
Sikkim	-	-	9.55	4.32	0.40	1.50	15.48	8.00	-	-
Tripura	2.0	1.20	4.90	6.41	1.50	2.80	-	-	9.15	1.3
Total	32.8	23.07	37.46	127.47	27.50	27.49	10.78	8.71	14.17	3.9
<b>All India</b>	<b>81.31</b>	<b>113.1</b>	<b>86.16</b>	<b>317.8</b>	<b>163.0</b>	<b>552.3</b>	<b>11.65</b>	<b>12.10</b>	<b>216.5</b>	<b>79.1</b>

Source: Directorate of Economics and Statistics, Ministry of Agriculture (2006-07)

#### Marketing aspects of spices in NE Region

In North East India, there is normally no Government intervention in spice market with regard to marketing or maintenance of reasonable price to farmers. Farmers have no option other than selling to nearest merchant, buyer, village shop or some times to terminal market immediately after harvest when the price is at the lowest. The choice depends on number of factors such as loyalty or financial obligation to particular trader, distance from terminal market,

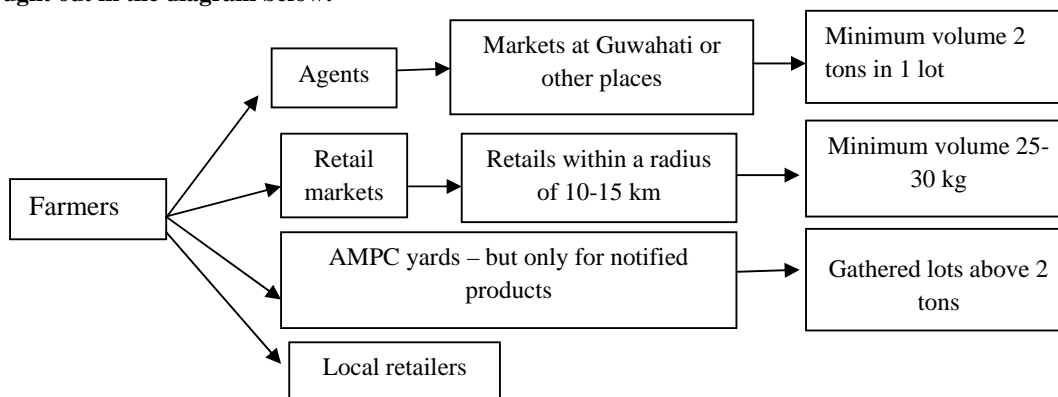
prevailing market price etc. Marketing the produce to pre-harvest contractors is also prevalent in certain areas. In this farmers receive advance payments immediately after acceptance of the offer.

In the North East Region, farmers are naturally risk averter and prefer to be safe than sorry; they tend to prefer an inferior outcome that is relatively certain to the prospect of a higher average return with a greater degree of risk attached. Markets are thin, unorganized and lack of market power to the small holders makes market more risky. Lack of

finance also undermines the capacity of private sector to invest in its trading enterprise and limits the scope and scale of market operations. The real challenge for NEH region is to devise options that mitigate the risk

of the farmer who produces and markets commodities that are small in quantities, have high cash costs, require credit to finance the cash purchases, and are perishable.

**The general scenario of market infra-structure, the dynamics of marketing of horticulture produce is brought out in the diagram below:**



### Scope of value addition in Spices

In North Eastern Region, a huge quantity of good quality spices viz., ginger, turmeric, chillies and black pepper are produced, but most of the growers during peak season sell their produce at throwaway prices in the local market or to the commission agent. Different value added products from spices like oil and oleoresins, powdered form, paste from ginger and turmeric; pepper and ginger in brine; curcumin from turmeric; capsanthin and capsaicin from chillies; candy, cookies, flakes, beer, wine and juice from ginger, white, dehydrated, freeze dried canned, bottled and dehydrated salted green pepper etc can be prepared from this NE region.

### Prospects of spices cultivation in NE states of India

North Eastern states offer immense potential for large scale cultivation of spices. It is estimated that the region can create exportable surpluses at competitive prices so that the top slot occupied by the country in the international market would be maintained. North East and Hill States have the potential to become major spice exporting centres if adequate processing facilities are set up in these areas. There is tremendous scope for cultivation of exotic spices in North Eastern states of India as the region is blessed with ideal soil and climatic conditions. These spices are amenable to organic farming which results in chemical residue free commodity for domestic as well as export market.

In general, the topography of NE states are undulating and mountainous. Humidity is high with high rainfall and even distribution all through the year in comparison to the western states or even from the place where most of the seed spices have originated. Presence of cloudy days and even in cooler regions,

frost is not a problem where all these conditions are ideal for cultivation of fennel, fenugreek, and coriander but not for cumin which require drier climate. High humidity of NE region would be ideal to explore commercial cultivation of the said seed spices in this region.

At present, no tree spices are commercially grown in North East India, though there is a tremendous potential for growing these crops. The climatic conditions prevailing in the NE states are ideal for cultivation of some of the tree spices. There are about 17 tree spice grown in the country and among them Cinnamon, Cassia, Tejpat, Cambodge, Kokum and Nutmeg can be grown in parts of NE states where the temperature do not go below 15°C. The rich resources reservoir and ideal climatic conditions prevailing in the NE India provides a favourable niche for the growth and commercial cultivation of herbal spices like mint, majoram, origanum, basil, sage etc.

Most of the NE states are having virgin land without any commercial cultivation that is very much suitable for organic cultivation of spices and major spices like black pepper, ginger, turmeric and chillies have larger area in this tract. Potentials of organic spices in North Eastern Region:-

- Less use fertilizers and pesticides in the region, this is far below the national average, makes the region very potential for organic cultivation of spices.
- Area under organic spice cultivation can be instantly recognized and the process of certification will be expedited.
- Currently, a total area of 114500 ha is under spice cultivation. A major part of this area can be converted for organic farming.

*Spices scenario in the North Eastern States of India*

- Vast traditional and indigenous knowledge systems (time tested indigenous farming systems and other indigenous practices) in agriculture and allied sectors can be exploited and utilized in NER.
- Vast resource of biomass, green manure and litter falls through forest species that can be utilized judiciously in organic farming.
- Varied agro-ecological zones (from foothill to alpine zone) offer great scope for production of different spice crops.

network, focused research in order to harness the potentiality of this region for quality spice production. It is suggested to form farmers' organizations/co-operatives both at local level and at the regional level for better marketing of the produce.

**REFERENCES**

- Dubey, A. K., Dinesh Babu, K. and Yadav, D. S. 2000. Status and prospects of horticulture in NEH Region. [www.gbpihed.nic.in](http://www.gbpihed.nic.in)
- Ghosh, S. P. 2007. North-East Unexplored (Ed. Khan, M. J.), *Agriculture Today*, **10**: 56- 60.
- Yadav, R. K., Yadav, D. S., Rai, N and Patel, K. K. 2003. Prospects of horticulture in North Eastern Region. *ENVIS Bulletin Himalayan Ecology*, **11**: 10-25.

North Eastern region of India has a tremendous potential for the production of spices. There is need to improve infrastructure extension  
*J. Crop and Weed*, 8(2)